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SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *The American Journal of Psychology; Ar. de Ps.* = *Archives de Psychologie; Ar. f. G. Ph.* = *Archiv für Geschichte der Philosophie; Ar. f. sys. Ph.* = *Archiv für systematische Philosophie; Br. J. Ps.* = *The British Journal of Psychology; Int. J. E.* = *International Journal of Ethics; J. of Ph., Psy., and Sci. Meth.* = *The Journal of Philosophy, Psychology, and Scientific Methods; J. de Psych.* = *Journal de Psychologie; Psych. Bul.* = *Psychological Bulletin; Psych. Rev.* = *Psychological Review; Rev. de Mét.* = *Revue de Métaphysique et de Morale; Rev. Néo-Sc.* = *Revue Néo-Scolastique; Rev. Ph.* = *Revue Philosophique; Rev. de Ph.* = *Revue de Philosophie; R. d. Fil.* = *Rivista di Filosofia; V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie; Z. f. Ph. u. ph. Kr.* = *Zeitschrift für Philosophie und philosophische Kritik; Z. f. Psych.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane, I. Abtl.: Zeitschrift für Psychologie.* —Other titles are self-explanatory.]

Les origines philosophiques du pangermanisme. CH. AUDLET. Rev. de Mét., XXIII, 5, pp. 659–695.

Pan-Germanism has its roots in German philosophy, which is not so much a rational construction, seeking anxiously and earnestly to determine the conditions of the intelligibility of knowable things and of human conduct, as it is a system of thought which reflects a living and passionate experience. The fundamental problem posed by German philosophy is "What is the *rôle* of spirit in the world?" and the answer given by all German philosophers since Leibniz and Kant is that the universe is so constituted metaphysically, that spirit, in spite of all obstacles, has finally gained the victory. Especially it realizes itself in the social order, in the form of Right, and its supreme manifestation is the State. The moral order of the universe consists always in realizing the conditions which render possible the triumph of thought, but only the Germans are initiated into this thought, and, consequently, the entire process of history and of the world would be devoid of signification without the triumph of the German people. Pan-German philosophy is a religious doctrine, a doctrine of predestination. Schiller was the first to enunciate this doctrine, but Fichte formulated it into a clear and complete catechism. Individuals are connected in two ways, first by life which does not exist substantially outside of them, but secondly, and more essentially, by the end they represent collectively, the moral order which living beings propose, which is the true universal in them. This bond is represented by the imagination as God, and his image it is that awakens us to our own profound inner activity whose essence is liberty. This is the revelation which was given to mankind through Jesus. But this is foreign to Graeco-Roman modes of thought, and to the thinking of those Germanic peoples who have accepted the Latin language. Only those Germans who remained East of the Rhine and kept their blood and language pure from any Latin admixture are capable of grasping this revelation in any complete sense. They alone are the people who can give the liberty of the spirit an objective expression in the State. This will be accomplished through the instrumentality of despotic geniuses to whom this revelation is granted, who will have the sanction of this immanent reason to impose their will on the people, and will stand above all the judgments of private morality. A real unified Germany thus brought into existence will be able to enforce a Germanic peace on all other peoples, for between states there is no law, no right, but the right of the stronger. All pacifism is anathema, the German statesman will be guided by the spirit of Machiavelli. On these main points of political philosophy and philosophy of history Hegel is largely in agreement with Fichte, differing mainly in repudiating the latter's panegyric of the primitive Germans who were, and remained up to quite recent history, barbarians, which is really the sign of their predestination, for thus they kept their volitional energy undiminished. History is not made by contemplative hermits but by passionate mobs. Goerres and Schlegel starting with a Catholic philosophy of history merely transpose all this doctrine into Catholic terms, the former for the benefit of the German Catholics of the Rhine and of Bavaria, the latter for those of Austria.

WM. E. BINGHAM.

L'Arithmétique et la théorie de la connaissance. L. BRUNSCHVICG. Rev. de Mét., XXIII, 2, 331–342.

The method of proceeding from philosophy to science results in two theories of knowledge, rationalism and empiricism. Neither of these views is applicable to mathematical knowledge. Purely rational procedure only gives us conditional knowledge; while experience is only significant for science in reference to intelligence. A number seems to be a purely intellectual creation; but once it is assumed, it has properties which can only be learned by experience. The arithmetician, on the basis of individual facts, seeks to discover laws, just as does the physicist. Thus Fermat was half persuaded that a certain formula would always give him prime numbers; but Euler discovered an exception. In some cases, however, an empirical generalization has been shown to be necessary. This is the case with the law that the perfect squares are obtained by adding successively to unity the odd numbers in the order of their progression. Mathematicians have always felt that their science could not be reduced to artifices of writing or of compatibility, that their activity was not exercised in the void. In fact, mathematics may appeal to experience. Thus the rule of the calculus of negative numbers, that *minus multiplied by minus gives plus*, has in itself no justification, for the very idea of a multiplication of negatives has no meaning when considered by itself. At first sight this rule might seem a purely arbitrary creation, like the decree of an absolute sovereign. But the mathematician must make an experimental test which will enable him to connect this rule of signs with the system of demonstrated propositions. The success of the idea of imaginary numbers disproves the rationalism which deduced, in the absolute, the successive conquests of science. But the experience to which we appeal is not opposed to reason. The mathematician proceeds like any other scientist, whether he correlates his results directly or indirectly with experience. We may trace the collaboration of reason and experience in the origin of the idea of number. The savages who cannot count are able to compute by a one-to-one correlation, similar to that process which Cantor and others place at the foundation of mathematics. Rationalism is correct in affirming that arithmetic is founded upon the activity of thought, but it is upon the activity of thought in connection with experience.

W. CURTIS SWABEY.

L'infini géométrique et l'intuition. A. REYMOND. Rev. de Mét., XXIII, 5, 737-747.

If geometrical intuition is accepted as regards the finite figures of euclidean space, the question arises as to what can be meant by such expressions as the point of infinity and the plane of infinity. Some philosophers hold that in using these ideas the mathematician has become the dupe of his own symbols, but if this were the case, it would be hard to explain how such ideas have enriched the study of finite figures as they have in recent years. On the other hand, to ascribe intuitive reality to the elements of infinity is to reduce them once more to the domain of the finite. In order to avoid this paradox, two elements must be recognized in geometrical intuition. Sensible intuition contributes the fact of extension itself and is the faculty which enables us to deal successfully with the ordinary finite figures, but this is always supplemented by what may be called rational intuition which adds a homogeneity and continuity, not found in experience. When this rational side is carried beyond its proper scope, it results in the reduction of geometry to a form of analysis which describes the relations between numbers or groups of numbers, and robs geometry of its individuality. True geometrical intuition consists in translating and synthesizing numerical relations into spatial forms, and in that way often contributes to the solution of purely analytical problems. By an extension of geometrical intuition as just described, it may be applied to the definitely determined relations which exist in infinite magnitudes by means of a law implied in the conception of numerical infinity. An indefinite line considered as a homogeneous totality of points cannot be thought of as having a beginning or an end, because if it were, the first and last points would be different from the rest and its homogeneity would be destroyed. Such a line may, therefore, be described as closed and cannot be conceived except in two dimensions. If a point is arbitrarily chosen on the line so conceived, it will correspond to a symmetrical point which can be called the point of infinity, and which occupies in relation to the first point a corresponding position in space of two dimensions. In a similar way the other elements of infinity,—plane of infinity, etc., may be determined and shown to have continuous relations to the elements of finite figures, without losing the quality which makes them infinite, namely, that of being smaller or greater than any given magnitude. The intuition which grasps them is in large part rational intuition and lacks, because it has no objects given in experience, only the more definite aspects which geometry realizes in dealing with finite figures.

F. W. A. MILLER.

La dynamique de l'imagination pure. J. SEGOND. Rev. Ph., XLI, 12, 569-585.

The pure power of determination, which is orientation in its entirety, is concrete. It is purely immanent in the given in experience; it does not have special content, though it may be considered as a schematic power in the same act in which it is developed. Even the empiricist will admit that for all schemas there is a certain unity or that all may be included in a single schema, which is for us the pure imagination. Far from being a feeble sketch of the concretely realized images it actually encloses the concrete and ordering mobility in the system of images. The individual schemas, through which this is accomplished, are energizing principles of concrete extension, and it is the inexhaustiveness of their constructive energy which renders indeterminable the inventive richness of their influence. These schemas resemble somewhat the Kantian, but differ in that they effectively realize their formal character. The productive imagination, such as the *Analytic of Principles* gives, treats only that one faculty of organization, exterior to the images which it unifies; and it gives only abstract forms ideally superior to the contents which they embrace. Our schemas are not only ideal and superior forms; they are full and rich with all the concrete experience which they picture and orient. The synthesis in act and in becoming is surely the real which it organizes in its own development. It is in the internal dynamism and in the schematization of this power that we search for the secret and effective principle of realities as yet unborn. This is found in the concrete schematization of the purposive intuition. This schematic intuition makes us think of those elastic schemas whose rôles were explained by Bergson. It is certainly analogous to them in its relation to the images and in its own mode of existence. Although Bergson speaks in various places of a "*Passage du schema aux images*," it is only the *activity* of the schema that is immanent for him. And if we compare his explanation of the schematic activity to the exterior proof of the *élan vital* or of the intuition itself, it is evident that from the beginning the schema is offered as an intuition. Our schematic synthesis differs from that of Kant in the exact respect in which it resembles that of Bergson. Nor ought we to identify it entirely with that, for the Bergsonian schema, even if it is an intuition, and even though it develops itself by the consideration of images which it calls up and orients, seems to be a stranger to all determination, to be not *une intuition imaginative*, but *une intuition intellectuel.* We can seize the creative intuition only in the moment of its fruitfulness, in the real and intense acts of its functioning, in the changing simplicity of its interior becoming. We grasp it immediately in the overflowing richness of each sentimental or picturesque creation, in poetic passion and in ecstacy; in short, in the overflow of our passions. Its purposive power is entirely in the universe which it determines. On the other hand, let us not forget that the universe, organized by its act, is no other thing in all its differences than the coming of our experience. In spite of the essential continuity of this creative purpose it is possible to distinguish different forms in its working. This determination of moments and aspects is doubtless artificial; but it permits an analytical classification. One can break up by this artifice, *l'oeuvre de l'imagination pure.*

E. D. PUGSLEY.

Qu'est-ce que l'évolution? F. PAULHAN. Rev. Ph., XLI, 12, pp. 505–546.

The idea of evolution has extended itself over all fields of thought in the last fifty years. The study of the evolution of a thing has even been held to replace the study of its nature; but in fact the study of evolution should be a means to the understanding of the nature and value of things. The essence of evolution is growing systematization, augmentation of the internal finality of the being which evolves. Dissolution is the relaxing of system, or disintegration. When the child becomes a man, or a city creates a state around it, or life becomes more complex, richer and more coherent, or our knowledge forms itself into systematic theories, or when a nebula resolves itself into a stable astronomical system, we have evolution. This growing systematization may involve either an increase in the number of elements systematized, or in the strictness of the coordination. Dissolution is the falling apart of a system; it need not retrace the stages by which the system evolved. Evolution and dissolution are inextricably intertwined; in some cases it is hard to say which predominates. In the end all individual organizations come to an inevitable dissolution, death. Evolution as a process of organization is a process of subordination of the 'other' to the 'same.' This is the metaphysical side of evolution. The 'same' is essential to evolution; there is no evolution without an identity which develops. In the process the 'same' affirms itself more and more; a child's self progressively realizes itself as the child becomes a man. In evolution things become "*plus le même qu'autrefois,*" *i. e.*, their essence becomes more manifest. The individual becomes more and more an individual. As the 'same' develops the parts which make it up develop. Frequently there is a conflict between the part and the whole. Side by side with growing assimilation, there is growing differentiation, in which two processes are opposed. Considering the physical and astronomical evolutions, and the biological evolutions, we may say that evolution itself evolves, becoming most definitely and clearly itself in the latter. In social evolution, the evolution is still more vast, but more incomplete owing to the complexity of the material. A thing which evolves may be said to be a thing which transforms itself in order to conserve itself. One can thus interpret the theory of Quinton that the whole purpose of evolution is to maintain "*le milieu marin*" of the primitive plasm in a constant chemical and thermal condition. The whole development of the organism, of individuality, the whole enrichment of intelligence and refinement of sentiment, and all our industry and social life would be merely to conserve the plasm in "*le milieu marin.*" These theories are attractive, but they involve difficult questions of finality. In the organism not only are the parts reciprocally ends and means to each other, but the system is the deeper end of them all. The soldiers are not for the general, nor the general for the soldiers, but both that there may be an army. In every organism there are some things much more important than others. The end of evolution is the development of larger, surer, and more unified life for the individual and the social groups. For this end, the chemical composition and temperature of the serum are conditions. It seems as if the 'same' of evolving things itself changed in evolution; there is great difference between the embryo and the man, for example. In fact, evolutions can be divided into two great classes, those which repeat some predetermined pattern, and those which invent. Thus the growth of each human individual is determined in outline by the character of the species. Here the 'same' which is conserved is not an individual whole, but the possibility of arriving at a normal adult. It is a direction, a virtuality. In the case of evolutions which invent, whose courses are unpredictable, the question is more complicated. The growth of every individual is in part unpredictable. The growing individual realizes the 'idea' of the species and at the same time creates the 'idea' of the individual as such. The evolution of societies is also original, and we are unable to predict the fate of a people in the same way that we can that of an individual. There is no general predetermined plan for the development of life in general, of mind, or of humanity. Had we been able to know the undifferentiated protoplasm whence have come all forms of life, we could not have predicted the great reptiles of the secondary period, the insects, the mammals, or man. The 'same' of such a process cannot be foreseen. May not this whole terrestrial evolution be a repetition of a process occurring elsewhere in the world? On Nietzsche's theory of the eternal recurrence such would be the case. There is, however, no evidence for this view. Evolution conserves, disengages, and concentrates the essences of things, so that that which evolves becomes more itself. A civilized man is more truly a man than a savage. The essential nature, the 'same,' in an inventive process of evolution, may be compared to a major premise which yields a number of different conclusions according to the minor it is combined with. The 'same' is modified by circumstances. The primordial essential virtualities conserve themselves in evolution by combining with diverse secondary characters. However, this is not the whole truth. In a sense the essence also evolves. Everything carries the germs of contradiction in it, and is forced to transform itself. Although when the child becomes the man it carries on the personality, the elements of it are no longer the same. What remains of the child becomes more and more attenuated, more and more abstract. Every idea contains elements the development of which contradict the original idea, as in the case of Christianity, evolution, imitation in Tarde's philosophy, etc. What conserves the primitive essence becomes the more abstract, the more the evolution advances. There is in evolution a double movement; the progressive attenuation of the primitive essence, and the formation and conservation of new concrete realities, which in their turn become attenuated. This "*dépouillement*" of the 'same' is essential. In a sense the end of evolution is evanescence. There the primitive essence is conserved and transformed in a superior being, its finality is subordinated to a vaster finality, and its action continued, although it disappears as a distinct and individual being.

W. CURTIS SWABEY.

La suggestion comme fait et comme hypothèse. E. BOIRAC. Rev. Ph., XLI, 9, pp. 193–221.

Normal suggestion consists merely in conveying to another person an idea, which he may accept or reject. Hypnosis is an abnormal state whose chief characteristic is a greatly increased suggestibility, a suggestibility whose power is generally irresistible. The school of Nancy, however, holds that hypnosis is itself merely a function of normal suggestibility. We produce sleep by suggestion, just as we produce laughter by suggestion. Hypnotic sleep is identical in essence with ordinary sleep. The Nancy school also claims that hypnosis can be produced only by suggestion. But other operators produce hypnosis by purely physical means, such as prolonged fixation on a brilliant point. Dr. Lajoie tells of the case of a boy who fell into hypnosis at home, presumably alone, by looking at the reflection of the sun in a bowl. The boy, of course, had no idea of hypnotizing himself. Hypnotic sleep, moreover, is absolutely dissimilar to ordinary sleep. In hypnosis we have either a continuation of the sensory and motor functions, or else complete insensibility; we often have retrogressive amnesia; the patient is in rapport with the operator, and awakens only upon specific command. The school of Nancy holds that these peculiar phenomena of hypnosis are suggested to the subject, either by the operator, or by the subject himself. But oftentimes we hypnotize persons ignorant of the characteristics of hypnosis who at once show all of the usual symptoms. Other persons, familiar with the nature of hypnosis, and desiring to be hypnotized, only incompletely show these symptoms. According to the Nancy school, suggestions are always carried out unless they are checked by counter-suggestions arising from the fundamental ideas of the subject. In hypnosis these fundamental ideas are paralyzed, and so foolish suggestions are accepted. But why are these ideas paralyzed in hypnosis? Thus the Nancy theory itself presupposes another principle. Psychological conditions depend upon physical conditions. Hypnosis must be the result of some abnormal physical condition. Suggestion is only one characteristic of hypnosis. Sometimes we have a superficial hypnotic state accompanied by great suggestibility, and sometimes a profound state of hypnosis with little suggestibility. There are two kinds of hypotheses: (1) A theoretical hypothesis, which seeks to explain known facts; (2) an experimental hypothesis, which serves merely as a working basis for the discovery of new facts, which may prove or disprove the hypothesis. The school of

Nancy uses suggestion as a theoretical hypothesis. Their success in the therapeutic use of hypnosis does not prove their position, however. One may use a procedure without understanding it. The producing of actual objective results in the treatment of patients shows that hypnosis is something more than mere suggestion. The Nancy school holds that suggestion explains all hypnotic phenomena. They assume suggestion even where it can not be proved to exist. Phenomena which can not be explained by suggestion they regard as imaginary. However, our insufficient knowledge of parapsychic phenomena does not warrant us in reducing them all to a single principle. Also, the fact that suggestion produces a psychic phenomenon would not prove that the phenomenon could not be produced by another cause. We need an experimental hypothesis, not a theoretical hypothesis which seeks to explain everything *a priori*. People are hypnotized in spite of their absolute disbelief in hypnosis; other persons can not be hypnotized even with the help of the greatest belief. These cases are not mere exceptions; they are significant negative instances which prevent us from stopping with apparent causes. Suggestion can not explain: (1) Exclusive rapport; (2) the transmissibility of this rapport by contact or conduction; (3) spontaneous anaesthesia; (4) consecutive amnesia; (5) the curative powers of hypnosis; (6) the exteriorization of the sensibility. Neither does the school of Nancy account for clairvoyance, telepathy, and spiritism.

MELVIN RIGG.

L'Objectif et le subjectif. F. LE DANTEC. Rev. Ph., XLI, 7, pp. 1–25.

The conquests of physical science and the revelations of the microscope in the nineteenth century have shown the vanity of spiritualistic fables and made it possible to speak scientifically of life in its entirety. The 'soul' is following its etymological parent the 'wind' in the transformation from metaphysical mystery to physical fact. The primary attribute of the objective world, that which makes it intelligible, is its continuity. We can trace the history of things, including men as objects, as far back as we please, and see how they have become what they are by unbroken gradual change in accordance with unvarying laws. When we say of anything that it might have been different, we mean that we should not have been surprised if it had been different, a simple confession of ignorance. This applies to human conduct; "X did this, but he could have done otherwise," is merely one of those numerous asininities which we can express grammatically because our language is an inheritance from ignorant ancestors. In contrast with the world, including human beings objectively viewed, with its unbroken and infinitely remote history, my subjective life is narrowly limited in space and time; it is cut off from most of the world of objects and of other subjects, and is filled every moment with absolutely new beginnings. The self is shut in completely by the skin of the body, and only those changes in external things which chance to impinge upon this 'leather sack,' either directly or through the medium of light or sound waves, and so set up change within it, can enter my subjective world. Of most even of what goes on in this leather sack itself I am completely ignorant. There must be some break in the normal routine of functioning to affect my consciousness. In the strict sense my subjectivity is made up entirely of absolute beginnings. Yet this sack of leather which is called me, with all its contents, is, as experience constantly shows, part of and continuous with the objective world, which also contains innumerable other beings, similar objectively, and by inference, subjectively, to myself. The illusion of discontinuity, of freedom in conduct, is due to the limitations of the subjective point of view, to the study of life in our own bodies, which we know both objectively and subjectively. When we study life objectively and experimentally, we readily see the mistake; for the living bodies with which we work manifestly imagine themselves moved by their own wills in their responses to stimuli which we have contrived for our own ends. A little reflection will place us also in the world along with other such mechanisms. We seem to ourselves to be moved by independent volition, but unless we are dominated by the anti-scientific will to believe, we must recognize that in reality we are like puppets whose strings are pulled through relations with our environment, relations too complicated for us to understand.

F. H. KNIGHT.

La méthode objective. R. TURRO. Rev. Ph., XLI, 10, pp. 297-316.

The sole method of knowing mental phenomena is that of introspective examination. Practiced from whatever point of view, this is purely descriptive and is valuable as such. It describes the sequences and successions of mental phenomena as they are observed and never asks the question why they appear as they do. This procedure differs from that of physical science which concerns itself with causal relations and so may be called empirical, just as we call the classifications of the minerologist empirical because they do not involve an examination of the causal relations on which the observed differences and resemblances depend. At least, it will be agreed that the psychologist in his introspective examinations does not observe causal laws and principles. Not satisfied with these results, others give them a metaphysical explanation which is as odious as the results are unsatisfying. Those who seek to reduce psychic phenomena to physiological categories have shown that an intimate relation exists between consciousness and the functions of the nervous system and might be of use to us in this connection, did they not leave the exact relation between the two undefined. The theory of H. Ebbinghaus and Gustav T. Fechner that mental and physical phenomena are manifestations of an underlying unitary substance looked at from two points of view is purely metaphysical and does not help us from the experimental standpoint. W. Ostwald's theory that mind is a form of physiological energy is also scientifically unintelligible. From the empirical point of view, W. James claims that mind and body are independent phenomena coincident in time without possessing reciprocal action. But it seems to be an empirical fact that the prick of a pin causes pain and so parallelism needs to be postulated only in these complex phenomena where the relations are not so easily observed and determined. In fact, the physicist proceeds in this manner describing as coincident those relations for which he has not as yet worked out the exact conditions. He means no more by cause, than that he knows all the conditions which determine the appearance of a phenomenon. Using this same criterion, we have as much right to say that a pin causes pain, or that alcohol acting on the nervous tissues causes a feeling of hilarity in consciousness, as we have to say that the vibration of a body causes sound. When all the physiological factors which condition the appearance, variation, and disappearance of mutual phenomena, however complex, have been discovered in detail, the psychic life will no longer appear as a floating mass of facts coincident with vaguely conceived physiological phenomena, but as a causal chain of sequences.

F. W. A. MILLER.

La doctrine pluraliste. B. BOURDON. Rev. Ph., XLI, 5, pp. 409–433.

Since we can always establish some differences between any two phenomena whatsoever, as for instance difference of position in time and space, without which they would become identical, a thoroughgoing monism is impossible. The only defensible doctrine as long as we remain in the realm of facts, is that which maintains a plurality of elementary, irreducible phenomena. The data of sense can only be considered as reducible by abstracting their common qualities, such as intensity, duration, extension, etc., which, however, are never experienced in isolation. Motion considered by the physicists and by many psychologists as elementary is an abstraction of this kind. Association, resemblance, and difference might be cited as elementary phenomena, but they too are abstractions, not existing by themselves. Images and concepts can be reduced to sensations only in so far as they resemble them. The notion found in science that there are specific and distinctive phenomena other than those mentioned is due to the separation of the quantitative and qualitative treatment of objects. In the same way we might get other specific psychological phenomena, which would lend support to the theory here advocated. Really, however, the difference between mental and physical does not reside in the objects themselves, but rather in whether we associate them with the self or with other external things. These associations between elementary phenomena are unquestionable facts, as for example, the combination of subjective phenomena called the Self. It is also unquestionable that definite quantitative and qualitative determinations of one phenomenon are correlated with definite quantitative and qualitative determinations of another; sound, for instance, with air vibrations and heat with motion. Whether heat is a transformation of motion or sound a transformation of vibration is not so evident. We must bear in mind that correlation implies the idea of simultaneity, while transformation, causation, or communication implies succession, gradual change, and compatibility of the phenomena transformed. This is the difficulty in the way of the materialistic atomists, who try to reduce all phenomena to atoms and motion. They are the first to deny that heat follows motion and that sound follows vibration, claiming that one motion is always followed by another motion which affects our sense organs and brains, thus producing heat and sound as specific phenomena existing in us. But the question still arises, does the sensation of heat or sound follow the brain excitation or are the two simultaneous? Besides, to say that heat and sound are specific phenomena existing in us is not a monistic doctrine; and if it is developed consistently leads to subjectivism by relegating motion itself to the mind. Lastly, this theory explains sound and heat only by begging the question, that is by assuming motion in the first place. Those who try to reduce everything in the world to energy and its transformations are no better off, since they make use of an illegitimate abstraction which enables them to conceive of energy as an underlying faculty or substance. In conclusion, if we examine the infinitely small and imperceptible atoms of which the world is made in these monistic doctrines, we find that they are analogous to perceived things. Atoms are conceived as having form, dimension, mass, and motion. But why not conceive them as having sound, color, odor, and flavor? Probably because more is known of motion and consequently more can be described in terms of it. If sound were even better known and even more susceptible of mathematical treatment, the monists would claim that motion was a transformation of sound rather than that sound was a transformation of motion.

F. W. A. MILLER.

Tendencies of Legislative Policy and Modern Social Legislation. ERNST FREUND. Int. J. E., XXIV, pp. 1-24.

There has been in the past ten years a great change in the attitude of American Courts towards social legislation. In 1905 in the decision of the so-called bakeshop case the Supreme Court expressed a decidedly hostile spirit towards this kind of legislation. The fundamental problem involved, as to whether the extension of legal power over personal and property rights not covered by specific constitutional guarantees is a legal or political issue, can be solved only after a survey of the actual historic changes in statutory policies. These changes can be arranged under a few principal heads: (1) the recognition of the right of personality; (2) the establishment of freedom of thought; (3) the repression of unthrift and dissipation; (4) the protection of public health and safety; (5) the relief from social injustice. (1) In behalf of the right of personality there has taken place the abrogation of personal slavery, the disappearance of legal class distinctions, the recognition of the rights of aliens, and emancipation from domestic subjection. In this process, through which personal status has gone, liberty and equality have received in the nineteenth century practically universal recognition. Elements of race destination alone persist and leave on our hands difficult and sinister problems. The most marked triumph of the right of personality is the emancipation from the abuse of domestic power. (2) In regard to freedom of thought we find that religious toleration has gained almost universal recognition in the nineteenth century, absolute freedom of the press has been established in most civilized countries, and freedom of political agitation has gained wide acceptance. The recognition of the political wholesomeness of free opinion may be regarded as one of the greatest achievements of democracy and education in public affairs. These advances were, however, largely a matter of the removal of legal and other restrictions; it is in regard to the other changes to be considered that we have a more positive functioning of legislation. (3) In regard to drink, gambling, and sexual vice, legislative policy grows more aggressive with the advance of democracy, even to the extent of radical interference with personal liberty. The standard of this 'morals' legislation is, however, higher than the enforcement, especially in America, where the legislative function is entirely divorced from the administrative. (5) Modern legislation in regard to public health and safety has in general merely extended a function recognized and exercised in much earlier times, but it has extended to a degree that in its interference with personal affairs would make the subject of an oriental despotism stand amazed. Its justification is based very largely, however, upon the recognition of the reciprocal dependence of men upon each other's standards of conduct for the preservation of health and safety for all. (6) By social legislation is meant those measures intended for the relief and elevation of the less favored classes, measures exemplified in the Workingmen's Insurance laws of Germany which have been adopted largely in recent years by England. A marked peculiarity of this new legislation is that its application carries no stigma or disability, as did for example the earlier Poor Laws of England; but a sharp line is still drawn between relief and the larger policy of using the Power of the State to alter the terms of the labor contract. An entire readjustment or reconstruction of the economic relation between classes is not, as yet, generally speaking, considered as part of a practical legislative program. Social legislation of a reconstructive character has been enacted however; factory laws regulating the employment of children were early extended to the regulation of the conditions and hours of labor for women, and formulated quite recently to apply in a few occupations to men. The courts generally have sought to justify this kind of legislation on the basis of the police power of the State in behalf of public health and morals, but the effort becomes increasingly difficult and it would appear that the courts must ultimately be forced to recognize the right of legislative enactment on behalf of social and economic advancement. It was the recognition by the courts that legislative enactment was entering into a new field that provoked the opposition to the first steps noted in the beginning of this article, but their attempt to read into the general clauses of the constitution a purpose of fixing economic policies can only arouse thorough scepticism. Whatever its justification, the attempt of the courts to check modern social legislation can be properly estimated only if we recognize in it the exercise of a political and not a strictly judicial function.

W. E. Bingham.

Logistic and the Reduction of Mathematics to Logic. JAMES BYRNIE SHAW. Monist, XXVI., 3, pp. 397-415.

It was claimed by Bertrand Russell in 1901 that Boole in *The Laws of Thought* discovered pure mathematics, which is identical with symbolic logic. The logic of Aristotle having been broadened in the nineteenth century by the application of the mathematical notion of functions to propositions, and by the application of symbols to express all the relations, classes, subclasses and individuals as well as to express all the logical relations between propositions, Boole invented a simple algebra which would enable us to solve all the problems of the older logic. This was not the discovery of mathematics, but the mathematicizing of logic. Following this, Peano attempted to deduce the whole of mathematics from the undefined logical constants from which it starts. It developed that a large part of mathematics is about propositional functions and has to do with determining consistencies and inconsistencies, but that everything in mathematics is reducible to logical function cannot be admitted. The arithmetic of 2 and 1 was known before logistic. The notion of truth and truth-value introduced by logistic amounts to no more than that an assertion can be labelled as consistent or inconsistent if it is to be regarded as a proposition. No objective reference is made and, accordingly, if mathematics is to give us truth, we must assume the existence of a suprasensible world and an absolute truth, an assumption which is open to many criticisms. The final failure of logistic came in its treatment of infinity. Asserting the suprasensible existence of its objects, it was forced to assert an absolute infinity which cannot be defined and, therefore, according to Poincaré, cannot be reasoned about. Absolute infinity must never be confused with infinity as an unlimited class, arbitrarily defined. Our conclusion must be, then, that logistic furnishes truth to mathematics, just as geometry, algebra, or theory of groups does. It can exist as an independent branch of mathematics, but it is not the overlord of the mathematical world.

F. W. A. MILLER.

The Truth Problem. RALPH BARTON PERRY. J. of Ph., Psy., and Sci. Meth., XIII, 19, pp. 505-515, and 21, pp. 561-573.

There are four senses in which the term 'truth' is commonly employed, namely, in the logical, ontological, existential, and psychological senses. Truth in the logical sense is inherent in the principle of contradiction and its distinction from falsity is synonymous with that between positivity and negativity. For every relational complex there is a hypothetical negative and this type of being we will call a propositional complex. "While a multiplication of positivity is redundant, a positive qualification of a negative is significant." The possibility of deriving new propositions by the alteration of old is independent of the mental acts of affirmation and denial as well as of physical or mental antagonism, *i. e.*, the assertion of P is neither a mental denial of or incompatible with the assertion of not-P. Besides this logical sense of truth and falsity and other kindred properties, formal logic discovers certain specific propositions about the proportional complex as such which have to do with truth in the ontological or categorical sense. The categorical fact of contradiction as illustrated by the difference between 'P implies q' (merely 'considered') and '(p or q) implies P' (possessing the 'assertion sign') is in reality a question of what is before the mind, and not of the attitude of the mind itself, there being a relational complex only when there is something which is in the relation in question—a logical fact is a fact in which the terms are proportional complexes without terms, and since the aim of a logical treatise is to get logical facts comprehended "it will place first what it is necessary to have seen in order to see what is placed after." In the case of existential truth we have a proportional complex on the one hand and something that is a value of a variable on the other, and while the particular statement, as New York is greater than London, is true, the general law under which this statement comes, as X is greater than Y, is not a fact. Nature is irrational in so far as its laws are true not formally, but only in the sense that material objects obey them. Truth in the psychological sense hypothesizes a mind which assigns a value to a variable and thus brings together a general function and a particular case of it. For example in the proposition "This is a rainy day" there is such a thing as raininess which not only may hold of today, but in the present case is 'said of' today. By giving to certain sounds general meanings and then combining these sounds in various ways, it has become possible "for the finite number of sounds which the vocal organs can produce to cope with the infinite variety of individual situations." To every specific, variable, cognitive claim in which there is either merit of truth or liability to error there are three requisites, namely; (1) a committal attitude of mind such as belief; (2) an object concerning which the claim is made; (3) a point of application for the belief which may be an object of acquaintance (*a*) not symbolized, (*b*) symbolized by pronouns or, (*c*) named. While the object of belief must exist in the case of error it need not be *as it is believed.* Since the truth or error of a belief is determined in advance of the moment of evidence the pragmatic theory is correct in emphasizing the formative action of the mind, the coherence theory in emphasizing the importance of logical principles of contradiction and universality, and the correspondence theory in emphasizing the disjunction between truth and error as dependent on the decree of fact.

CHARLES H. WRIGHT.

Belief and the Criterion of Truth. A. K. ROGERS. J. of Ph., Psy., and Sci. Meth., XIII., 15, pp. 393–410.

In attempting to establish a criterion of truth we may start with the simple and self-evident proposition, "Truth for me is that which I cannot help believing." This implies the recognition of a distinction between true and false beliefs and presupposes a critical examination of them. Belief is a more fundamental concept, however, than truth, and the criteria of truth must be elicited from those beliefs which survive a critical examination. By 'cannot help believing' is not meant a merely logical possibility, but the survival of beliefs after an open-minded criticism on the basis of the fullest and completest experience. Similarly in the phrase 'for me,' there is no intention of pure subjectivism,—there is a reference to objective conditions in every belief,—but it is intended that every belief is a human belief, and that we cannot separate what is really true from what is believed to be true. We can distinguish two forms of primitive or intuitive belief:—(1) Intuitive certainty in the stricter sense where confidence rests on immediately seeing that a thing is self-evidently so, which only applies to the immediate perception of the existence, or the meaning of our own mental content; (2) confidence that our geometrical intuitions apply to a real spatial world, and so forth. There are three forms which human nature takes in influencing primitive belief, viz., confidence due to our intellectual nature, to our practical needs, and to our emotional preferences. Coherence is a rational justification of belief, coherence, not in the sense of a logical necessity, but as implying a system, from which we gain the mutual corroboration of beliefs. Our theoretical and practical postulates gain practical certainty by their organization of our experience. The emotional postulates are regarded, however, with the greatest suspicion, mainly because they tend to attach themselves to beliefs not susceptible either of proof or disproof. If any belief can be shown, however, to be logically connected with other beliefs for which we do have some grounds, it shares in some degree that rational character. Beliefs must undergo criticism and analysis in order to claim rational acceptance, but criticism and analysis must have the background of a *Weltanschauung* whose principle of unity is reason as the instrument of a purposeful human life.

WM. E. BINGHAM.

The Development of Leibniz's Monadism. T. STEARNS ELIOT. Monist, XXVI, 4, pp. 534–556.

"Commencing with an analysis of the nature of matter, Leibniz is led to the view of a universe consisting of centers of force. From this point of view, the human soul is merely one of these forces, and its activity should be reducible to physical laws. Under the influence of an Aristotelian doctrine of substance, he comes to conclusions which are not at all Aristotelian, by his nominalistic assumption that substances are particulars. From a materialistic atomism he is led to a spiritualistic atomism. In this he shows again an important difference between the ancient and the modern world." From the viewpoint of physics we have a real advance, but it is difficult to retain the separate forces unless we conceive of matter as a positive principle of individuation; and even then it is impossible to explain why a monad should become a master monad of a new organism at birth. In Aristotle matter exists only in contrast with form, and formed matter may become the matter for higher formations; for Leibniz matter really exists independently of spirit, but is really spirit, an arrested moment of mind. The entelechy of Aristotle is the completion of something; that of Leibniz is the monad, complete in itself. With Leibniz the relation of mind and matter is closer, the relation of body and soul more remote, than with Aristotle.

E. D. PUGSLEY.

Leibniz's Monads and Bradley's Finite Centers. T. STEARNS ELIOT. Monist, XXVI, 4, pp. 566–576.

The impenetrability of the Leibnizian monad distinguishes it from the monad of Bruno, and justifies our finding a likeness between Leibniz and Bradley. Their views are similar in almost everything essential, for example, as regards the isolation and indestructibility of the monad, the skeptical theory of knowledge, the relativistic view of space, time, and relation, and the relation of soul to body. From the pluralism of Leibniz to the absolute zero of Bradley there is only a step. Both are based on faith. Both attempt to sketch an ideal world, yet both have difficulty in maintaining that there is a world, and that there are objects for their mirrors to mirror. Bradley makes the soul the entelechy of the body, as does also Leibniz, although the latter is forced to call in the idea of the dominant monad. The monad combines clumsily several points of view, and the 'pre-established harmony' becomes necessary to solve the difficulties. 'The one Absolute,' working through finite centers, performs the same function for Bradley.

E. D. PUGSLEY.

Kant's Phenomenalism in its Relation to Subsequent Metaphysics. ARCHIBALD A. BOWMAN. Mind, N. S., No. 100, pp. 461–489.

The tendency in philosophy, since the time of Kant, has been toward a reconsideration of the denial of metaphysics and from the modern view-point even the Critical Philosophy is apt to appear metaphysical because, although excluding it from the knowable, Kant asserted the existence of the unconditionally valid. Nietszche charges Kant with subordinating the rational interpretation of experience to ethical prejudice, while Simmel charges that "it is a case of scientific simplification where simplification means falsification." Both make his speculative ideas independent of actualities, "just the feature in virtue of which Kant's thinking, despite the doctrinal negation of metaphysics, appears to the modern mind as metaphysical in the wrong sense of the term." By substituting for Kant's objective phenomena a world of objects *intuited as caused* and attempting to reduce his position to a simple pair of alternatives, namely, the thing in itself and the *Vorstellung,* Schopenhauer contrives to restore the metaphysical to knowability. He accomplishes this, however, at the expense of detracting from the objective character of knowledge and of involving himself in the ambiguity of defining the objectively real at one time in terms of the *Vorstellung* and its implications, and again as nothing short of the thing in itself. Recent thought tends to oppose Kant in his theory of the impossibility of knowing Noumena, in some cases claiming that experience is itself metaphysical. Philosophy needs to be given a closeness of relation, short of identity, to the conscious life of man, as suggested in Herbart's theory that philosophy is altogether immanent in relation to other knowledge. Upon the interpretation of immanent as giving to knowledge, when fully developed, the capacity to comprehend the reality with which philosophy deals, rests the idealism which reached its height in Hegel, while Herbart bases his system on an interpretation of immanent as a revelation of certain irreducible differences in the *knowable.* Hegel postulates an objective body of truth as the Absolute or God, and then confines the remaining categories to defining this substantive reality. No advance has been made in this method since his time. Philosophy, according to Herbart, is *immanent* in that "Metaphysics has no other definitory function (*Bestimmung*) than that of rendering thinkable the same ideas which experience forces upon it," and it is only by means of abstract logic that we learn to know the real, whose superficial appearance we get through sensation. Thus we see that modern idealism, failing to accept consistently Hegel's conclusions, ends in the Kantian antithesis of appearance and reality, while realism, by postulating the distinctness of thought and things, arrives at abstract thought as the only reality. While neither idealism or realism can justify phenomenalism in an emphasis of the antithesis "*in so far as it concerns the content of Kant's theory of knowledge,*" the antithesis is entirely negligible. The difficulty with philosophy has been in starting, not from experience, but from a *conception* of experience. Reality is whatever enters our experience as subjects. By realizing that the antithesis of theoretical truth and falsehood is simply a 'species under the genus' of the all-inclusive opposition of the valid and invalid, we conclude that the object of philosophy is the "*scientific exposition of the principles of validity which give significance to human experience in every one of its distinctive interests.*" Only in the philosophy of Kant, taken as a whole, is this idea suggested. Kant denies the possibility of metaphysics only in the sense that the object of knowledge must be defined in terms of that which makes it knowable, while the principles by which it is known are, in every sense, metaphysical. Metaphysics is, therefore, knowable as a principle; Morality likewise, though not an object of knowledge, is not on that account unknowable. Metaphysical, as well as objective knowledge, therefore, begins with experience and "the phenomenalist epistemology . . . is the key which unlocks the door leading to . . . a metaphysics having to do with every principle that determines the significance of human life."

CHARLES H. WRIGHT.